PROCEEDINGS OF THE

ENTOMOLOGICAL SOCIETY OF WASHINGTON

VOL. 50 OCTOBER, 1948 No. 7

TWO NEW NEARCTIC PSOCIDS OF THE GENUS TRICHADENOTECNUM WITH A NOMENCLATURAL NOTE ON A THIRD SPECIES[1]

(CORRODENTIA)

By KATHRYN M. SOMMERMAN,[2] *Washington, D. C.*

The members of the genus *Trichadenotecnum* can be distinguished from closely related genera of the family Psocidae by the color pattern of the forewing, R and M being fused for a short distance, and the hypandrium of the males possessing a median moveable tongue. Chapman (1930) used *Psocus* in the broad sense thus including these species in the genus *Psocus*. The recent tendency has been toward the use of *Psocus* in the restricted sense in which case the genus *Trichadenotecnum* erected by Enderlein in 1909 accommodates these species.

Trichadenotecnum slossonae (Banks)

Psocus slossonae Banks, 1903. ♀.

Psocus slossonae Banks, Chapman, 1930. ♀ only.

Psocus quaesitus Chapman, 1930. ♂ only.

Chapman (1930) examined the holotype of *slossonae* and redescribed and illustrated the species. I have not examined this holotype, but have studied females determined as *slossonae* by Dr. Chapman which agree with his description and illustrations. It appears that the sexes of *slossonae* and *quaesitus* have been incorrectly associated. Subsequent collection records indicate that the male of *quaesitus* belongs with

[1]Deposition of type material: Holotypes, allotypes and paratypes have been (or already are) deposited in the collections of the following institutions or individuals: A. Badonnel, Cornell University (CU), Illinois Natural History Survey (INHS), K. M. Sommerman (KMS), Museum of Comparative Zoology at Harvard University (MCZ), P. J. Chapman (PJC), J. V. Pearman, University of California at Berkeley (UCB) and the United States National Museum (USNM). The institutions or individuals are referred to by the above abbreviations, which in the text, follow the locality records.

[2]I wish to express my appreciation of the suggestions made by Dr. A. B. Gurney of the U. S. Bureau of Entomology and Plant Quarantine and to thank Dr. P. J. Chapman of the New York State Agricultural Experiment Station at Geneva, N. Y. for sending material, including types, from his collection for study.

the female of *slossonae*. Since *slossonae* was described first and its holotype is a female, and the holotype of *quaesitus* is a male, *quaesitus* then becomes a synonym of *slossonae*.

Male.—Length of forewings, 3.5-3.8; width of head, 0.8-0.9; length of antennae, 3.8.[3]

Head: pale; ocellar interval dark; front with two obliquely directed small fuscous spots near median line, two larger fuscous spots laterad of these and fuscous and brown spots bordering antennal socket; vertex with fuscous stripe following along arms of "epieranial suture" and two small spots caudad of lateral ocelli, the usual median brown spotted areas along "epieranial suture" and along the posterior margin of the eyes; clypeus with fuscous median spot on anterior margin which widens posteriorly forming an almost complete band across the clypeus between the antennae, posterior margin pale; anteclypeus fuscous; labrum brown with median posterior fuscous spots; genae pale with brown along margin of antennal socket and fuscous stripe from base of socket posteriorly above base of maxillary palps; distal segment of maxillary palps brown, three preceding segments fuscous or brown; antennae pale brown, densely clothed with setae; eyes large and robust.

Thorax: Dorsum pale, middle lobe light brown, darker anteriorly, fuscous spots at posterior margin of lateral lobes; pleura with fuscous and brown stripe extending from eye below wing base to abdomen, with a second incomplete stripe extending posteriorly above coxae; anterior coxa pale, others brown; two anterior femora each ringed with one fuscous band and possessing a fuscous spot ventrally at apex; posterior femora brown; forewing similar to female, hyaline, with large cloudy brown spots, dark brown spots and small brown speckles; hindwing almost entirely hyaline.

Abdomen: pale with indications of fuscous rings. Terminalia, (Figs. 1, 2, 4) brown; sense tubercles light brown, paraproets pale with a pale brown apical prong; suranal plate membranous, quadrangular, narrowing apically; hypandrium roughly quadrangular, narrowing apically, more heavily pigmented basally, medianly at apex arises a stout, moveable black tongue on either side of which arise the fixed asymmetrical claspers. The left clasper extends about to the apex of the tongue and the right, which arises lower, crosses behind and extends beyond the left one. Laterad of the clasper bases pigmented strips extend dorso-laterally; parameres fused, pale, with two dorsally directed "ears."

Female.—Length of forewings, 3.1-3.8; width of head, 0.8-0.9; length of antennae, 4.0.

The color pattern of the females is similar to that of the males. The eyes are smaller. Forewing, (Fig. 5). Terminalia, (Figs. ?, 6) brown;

---

[3]Measurements are the extremes of ten individuals, taken at random, if that many were available, and are given as an indication of the size range of the species. Measurements are given in millimeters.

sense tubercles and paraprocts light brown where pigmented, row of long delicate setae along lateral margin of paraprocts; suranal plate roughly triangular; subgenital plate with two heavily pigmented lateral strips joined by a median V-shaped pigmentation; egg guide constricted and more heavily pigmented laterally; internal plate dark brown, asymmetrical, "tad-pole"-shaped with "tail" projecting off to left; lateral gonapophyses light brown with rather long, pale caudal projection; dorsal gonapophyses fleshy and pigmented along sides.

Holotype ♀—Franconia, New Hampshire, MCZ (Not examined).

Allotype ♂—Mt. Carmel, Connecticut, Sept. 9, 1946, bark of maple tree, K. Sommerman, KMS.

Addition Collection Records: CONNECTICUT: same data as for allotype, 2 ♀ ; Mt. Carmel, July 27, 1947, beating hemlock, A. H. Sommerman ♀ ; Mt. Carmel, Aug. 1, 1947, tree trunks, K. Sommerman 3 ♀. MAINE: Mt. Desert Island (Beech Mt.), Sept. 12, 1926, C. P. Alexander ♀. NEW YORK: Southfields, Aug. 4, 1925, A. M. Nadler ♀ ; Ithaca, Sept. 12, 1925, on bark of beech stump, P. J. Chapman ♀ ; Ithaca, Sept. 6, 1926, dead limb, P. J. Chapman ♂ (holotype of *Psocus quaesitus* Chap.) ; Ceres, Sept. 16, 1925, Ironwood trunk, P. J. Chapman ♀ ; Nigger Pond (Oswego Co.) Sept. 3, 1926, P. J. Chapman ♂. OHIO: Shawnee Forest, July 1942, Light trap ♀. VIRGINIA: Falls Church, July 28-, N. Banks ♀. WASHINGTON, D. C.; Rock Creek Park, July 14, 1947, on rocks, K. Sommerman ♀ ; same but July 20, tree trunks ♀.

Trichadenotecnum unum, new species

Psocus slossonae Banks, 1903, Chapman, 1930, in part. (♂ misidentified).

Psocus quaesitus Chapman, 1930, in part. (♀ misidentified).

It has been shown previously in this paper that *P. quaesitus* Chapman is a synonym of *T. slossonae* (Banks). Subsequent collection records indicate that the male of *slossonae* as described by Chapman (1930) and the female of his *quaesitus* are a pair. Because of the synonymy involved a new name is here proposed for this pair.

This species closely resembles *T. slossonae* from which it can easily be distinguished by the symmetrical genitalia with the mesally-directed claspers of the male and the pattern of the subgenital plate and triangular internal plate of the female.

Male.—Length of forewings, 3.0-3.8; width of head, 0.7-0.8; length of antennae, (none entire).

Head: Color pattern similar to *slossonae* excepting that pattern on front is dark and V-shaped, with a lateral stripe from about midway

on each side that extends to margin of clypeus; fuscous lateral stripe across clypeus distinct; eyes large.

Thorax: Lateral stripes brown; two anterior femora each ringed with two brown bands with a fuscous spot ventrally at apex; forewing similar to that of female, (Fig. 11).

Abdomen: Terminalia, (Figs. 7, 8, 10) brown; sense tubercles light brown; paraprocts pale, with a slender pale apical prong; suranal plate membranous, bilobed, concave, with two pale median protuberances ventrally; hypandrium quadrangular, more heavily pigmented basally, notched medianly, apically and laterally two strong mesally-directed, curved claspers; about midway medianly on hypandrium a colorless, membranous tongue projects posteriorly; parameres fused, roughly triangular, posterior apex bearing two black, closely-set, thorn-like projections.

Female.—Length of forewings, 3.0-3.8; width of head, 0.8-0.9; length of antennae, (none entire).

Color pattern similar to male but fuscous band across clypeus indistinct; eyes smaller. Forewing, (Fig. 11) similar to *slossone* but apical band usually does not extend completely to wing margin in cells. Terminalia, (Figs. 9, 12) brown; sense tubercles and paraprocts light brown where pigmented, the latter fringed along the margin with row of long delicate setae; suranal plate roughly triangular; subgenital plate consisting of two pigmented triangles laterally and a somewhat triangular pale egg guide apically; internal plate triangular, rather pale, slightly more heavily pigmented apically; lateral gonapophyses pale with posterior projection shorter than that of *slossonae;* dorsal gonapophyses fleshy and pigmented along side.

Holotype ♂—Richburg, New York, Sept. 16, 1925, P. J. Chapman, PJC.

Allotype ♀—Same data as for holotype.

Paratypes: GEORGIA: Demorest, June-Aug. 1939, at light, J. M. Valentine 2♀, USMN. MAINE: Mt. Desert Island, Aug. 31, 1926, C. P. Alexander ♂, PJC. NEW YORK: Michigan Mills (Lewis Co.) Sept. 1, 1926, dead hemlock and spruce limbs, P. J. Chapman 5♀ (3♀ PJC, 2♀ KMS); Adirondack Lodge (Essex Co.) Sept. 2, 1927, P. J. Chapman ♀, PJC; Parkers (Lewis Co.) Sept. 2, 1926, P. J. Chapman ♀, PJC; McLean, July 31, 1926, dry hemlock boughs, P. J. Chapman ♀, PJC; Geneseo, Sept. 20, 1925, partly dead oak limbs, P. J. Chapman ♀, PJC; Artist's Lake (Suffolk Co.) Sept. 19, 1926, on dead limb, P. J. Chapman ♀, PJC. PENNSYLVANIA: Ole Bull (Potter Co.) July 8-9, 1947, Light trap, K. Erway ♂, KMS; Ohiopyle (Fayette Co.) July 18, 1947, Light trap ♂, KMS. TENNESSEE: Bristol, Oct. 5, 1926, Light of Cola stand, C.&B. ♂, PJC. TEXAS: Bexar Co., May 5, 1938, swept from plum, W. F. Turner ♂, USNM. QUEBEC, CANADA: Drummond's Point, Aug. 27, 1926,

A. M. Nadler 2 ♂, 3 ♀ (♂, 3 ♀ CU, not paratypes; ♂, KMS); same but Sept. 8-27 ♀, KMS.

Trichadenotecnum alexanderae, new species

This is a small, pale, mottled species, with speckled and spotted wings, which superficially resembles *T. slossonae* (Banks), 1903, but may be easily distinguished from it by the symmetrical genitalia of the male with laterally-directed claspers and the pigmented pattern of the subgenital plate of the female as well as the shape of the internal plate.

Male.—Length of forewings, 2.4-2.7; width of head, 0.65-0.7; length of antennae, 2.5-2.85.

Head: pale; ocellar interval dark excepting for "epicranial suture" and its arms; ocelli pale, median ocellus small (about half as large as lateral ocelli); front, anteriorly-posteriorly, longer than ocellar group, faint dark U-shaped spot medianly on front with two similar lateral stripes that continue across vertex to eyes; vertex with usual spotted areas medianly along "suture" and another along margin of eyes, dark streak extends posteriorly from outer margin of eyes; clypeus with 12 mesally-directed bands, pale posteriorly and fused into a dark purple median spot on the anterior margin; posterior half of anteclypeus dark; labrum pale, dark along posterior margine; genae pale, fuscous stripe from base of maxillary palps to clypeus anterior of antennal base; antennal socket bordered with brown; antennae pale brown, rather densely clothed with setae about three times as long as the width of segment; maxillary palps with distal segment dark brown.

Thorax: Dorsum pale, brown area on anterior part of middle lobe of mesothoracic scutum; lateral lobes pale, brown posteriorly between wing margins; pleura with brown stripe extending from eye below wing base to abdomen with a second stripe extending posteriorly above coxae; anterior coxa light brown, others darker; femora of two anterior pairs of legs each ringed with two pale and two brown bands alternating, dark spot ventrally at apex; posterior femora brown, paling in middle; tibiae light brown; tarsi darker. Forewing similar to female, hyaline, with large cloudy brown spots, dark brown spots, and small dark speckles.

Abdomen: pale with indications of fuscous rings. Terminalia, (Figs. 13, 14, 15, 17) dark brown; sense tubercles light brown; paraproets pale, dark along margins, elongate when extended, revealing two pigmented bars from sense tubercle to base of dorsally-directed prong at apex; suranal plate tri-lobed, semitransparent and membranous (when paraproet prongs exposed, suranal plate projects dorsally and posteriorly, somewhat seatlike in shape). Narrow dark brown plate anterior to hypandrium. Basally on hypandrium arises a spatulate moveable flap (tongue) that flares posteriorly and is slightly concave on posterior margin. Beneath this tongue mesal margins of hypandrium fuse part way then separate into two diverging hook-like claspers, each bearing a

small tooth on dorsal margin about half way. Parameres thin, fused to form almost symmetrical, heart-shaped structure.

Female.—Length of forewings, 2.7-2.9; width of head, 0.7-0.75; length of antennae, 2.3-2.7.

The females are similar to the males; excepting that the front, anteriorly-posteriorly, is about as long as the ocellar group; antennal socket is not completely bordered with brown and antennal setae are shorter; eyes are smaller. Forewing, (Fig. 18). Terminalia, (Figs. 16, 19) brown; paraprocts brown laterally and fringed along margin with long fine setae; lateral gonapophyses brown basally paling toward mesad extremity, posterior spatulate projection pale, short; dorsal gonapophyses typical with lateral pigmentation; ventral gonapophyses typically long and slender, pigmented on inner curve, membranous outwardly; subgenital plate, (Fig. 16) with dark brown, colorless and brown pigmentation; internal plate, (Fig. 19) roughly triangular with an articulation medianly, basal flap thickened and membranous internally.

Nymphs.—The nymphs are covered with glandular hairs and the later instars possess the same head and lateral thoracic markings as the adults.

Eggs.—They are elongate oval, about 0.5 × 0.3 and covered with particles of foreign material and a few miscellaneous strands of silk, very difficult to distinguish from the bark.

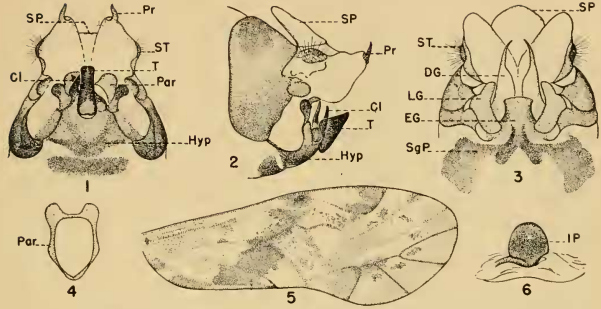
Habitat—taken from bark of poplar, maple, apple, pine, oak, and sycamore trees and from rocks and posts, (all of which usually contain much *Pleurococus*) from June to November.

EXPLANATION OF PLATE 15

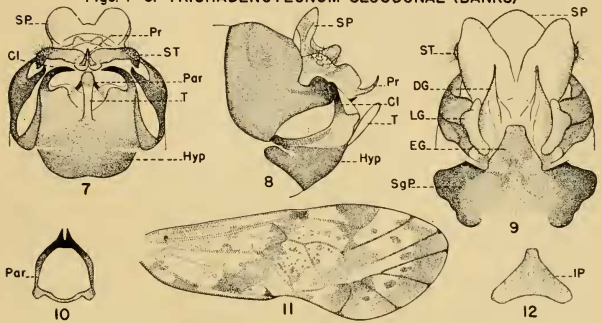
Figs. 1-6. *Trichadenotecnum slossonae* (Banks): 1. male terminalia, ventral view; 2. male terminalia, side view; 3. female terminalia, ventral view; 4. parameres of male; 5. right forewing of female; 6. internal plate of female: Figs. 7-12. *Trichadenotecnum unum*, new species: 7. male terminalia, ventral view; 8. male terminalia, side view; 9. female terminalia, ventral view; 10. parameres of male; 11. right forewing of female; 12. internal plate of female; Figs. 13-19. *Trichadenotecnum alexanderae*, new species: 13. male terminalia, ventral view; 14. male terminalia, side view; 15. male paraprocts distented, side view; 16. female terminalia, ventral view; 17. parameres of male; 18. right forewing of female; 19. internal plate of female.

ABBREVIATIONS

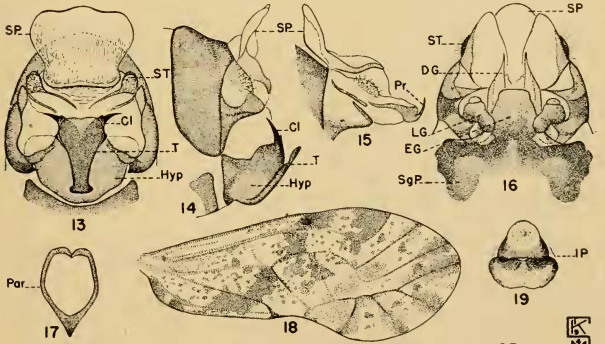
Cl—claspers ♂
DG—dorsal gonapophyses ♀
EG—egg guide ♀
Hyp—hypandrium ♂
IP—internal plate ♀
LG—lateral gonapophyses ♀
Par—parameres ♂
Pr—prongs ♂
SgP—subgenital plate ♀
SP—suranal plate ♂ & ♀
ST—sense tubercles ♂ & ♀
T—tongue ♂



Figs. 1-6. TRICHADENOTECNUM SLOSSONAE (BANKS)



Figs. 7-12. TRICHADENOTECNUM UNUM N. SP.



Figs. 13-19. TRICHADENOTECNUM ALEXANDERAE N. SP.

This species is named after Miss Wyvona Alexander who has collected many psocids and who assisted with the large collection from the type locality.

Holotype ♂—N. Plainfield, New Jersey, July 27, 1947, ex tree trunks, Sommerman and Alexander, KMS.

Allotype ♀—Same data as for holotype.

Paratypes: NEW JERSEY: Same data as for holotype, 66 ♂ 135 ♀, (7 ♂ 15 ♀ each, USNM, Pearman, MCZ, PJC, INHS, CU, UCB, Badonnel and 10 ♂ 15 ♀ KMS); N. Plainfield, July 29, 1947, ex tree trunks, W. Alexander 83 ♂ 71 ♀, KMS; same but Aug. 1, 131 ♂, 131 ♀, (7 ♂ 7 ♀ each, MCZ, UCB, INHS, 20 ♂ 20 ♀ USNM, 90 ♂ 90 ♀ KMS); same but Sept. 28, 3 ♂ 20 ♀, KMS. CONNECTICUT: (All from Mt. Carmel), August 4, 1942, under dead chestnut bark, A. H. Sommerman 3 ♀ KMS; Oct. 3, 1943, on window screen, K. M. and A. H. Sommerman ♀, KMS; July 15, 1944, pine grove, A. H. Sommerman 4 ♀, KMS; Aug. 3, 1944, White pine, A. H. Sommerman ♀, KMS; Aug. 9, 1944, apple tree bark, A. H. Sommerman 3 ♀, INHS; July 10, 1946, on pine trees, A. H. Sommerman 4 ♀, KMS; Sept. 2, 1946, maple tree trunk, K. Sommerman 6 ♀, KMS; Aug. 8, 1946, poplar tree trunk, A. H. Sommerman 4 ♀, KMS; Sept. 11, 1946, bark of trees, K. Sommerman 9 ♀, KMS; July 12, 1947, ex pines, A. H. Sommerman, 3 ♀, KMS; July 18, 1947, beating pines, A. H. Sommerman 5 ♀, KMS; July 28, 1947, pine tree trunk, A. H. Sommerman 2 ♀, KMS; Sept. 8, 1947, pine tree, A. H. Sommerman 3 ♀, KMS; Oct. 15-30, 1947, tree trunks and posts, K. Sommerman 40 ♀, KMS; Oct. 20, 1947, tree trunks, K. Sommerman 5 ♀, KMS. WASHINGTON, D. C.: Army Medical Center, Sept. 2, 1947, ex rocks, K. Sommerman 52 ♀, KMS; same, but Sept. 8, 32 ♀, KMS; Rock Creek Park, June 14, 1947, tree trunks, K. Sommerman ♀, KMS; same but June 29, ♀, KMS; same but July 6, ex rocks, ♀, KMS; same but Aug. 7, 11 ♀, KMS; same but Aug. 17, ♀, KMS; same but Oct. 5, tree trunks, 9 ♀, KMS. ILLINOIS: Homer, July 4, 1943, maple bark, H. H. and J. A. Ross ♀, INHS; Muncie, Sept. 19, 1943, oak and sycamore bark, H. H. and J. A. Ross 10 ♀, INHS. MARYLAND: Silver Spring, Aug. 8, 1947, tree trunk, K. Sommerman ♀, KMS. MASSACHUSETTS: Cummington, Oct. 1946, A. B. Gurney ♀, USNM; same but Sept. 8, 1947, on stones 3 ♀, USNM.

Addition Collection Records: CONNECTICUT: Mt. Carmel, July 13, 1941, apple bark, A. H. Sommerman ♀; same but July 15, 1944, green pine needles, ♀; same but Sept. 11, 1946, ex stones ♀; Stamford, Sept. 3, 1941, American elm, B. T. R. Lab. ♀. ILLINOIS: Muncie, Sept. 19, 1943, sycamore, K. Sommerman 4 ♀; same but oak bark, 10 ♀; Nr. Oak-

wood (Camp Drake) July 29, 1944, Sommerman ♀. MAINE: Mt. Desert Island, 1939, W. Procter ♀. NEW JERSEY: N. Plainfield, July 27, 1947, ex tree trunks, Sommerman and Alexander 18 ♂ 67 ♀ Ns; Union, June 4, 1937, ex elm, W. D. Buchanan 6 ♂. NEW YORK: Williamsville, Sept. 13, 1947, willow bark, A. B. Gurney ♀. NORTH CAROLINA: Durham, Oct. 15, 1940, ex Post oak, 8 ♀. PENNSYLVANIA: East Stroudsburg, June 26, 1937, from elm, T. H. Jones ♀; same but July 30, ♀; same but June 19, 1939 ♀; Aug. 10, 1939 2 ♀; 1937 ♀; Nov. 5, 1936 ♀. WASHINGTON, D. C.: Army Medical Center, Aug. 22, 1947, ex rocks, K. Sommerman ♀.

LITERATURE CITED

Banks, N., 1903. Some New Neuropteroid Insects. Jour. N. Y. Ent. Soc., 11:236-243.

Chapman, P. J., 1930. Corrodentia of the United States of America:1. Suborder Isotecnomera. Jour. N. Y. Ent. Soc., 38:219-250, 319-403.

A NEWLY DETECTED STRUCTURE IN CERTAIN TETRANYCHID MITES*

(ACARINA)

By E. A. MCGREGOR, *Whittier, California*

In 1832, when Dufour (1) created the genus *Tetranychus*, he stated that the onychial claw of the tarsus is cleft into four divisions. In fact, the genus name and the family name was based on this conception of the structure of the claw. Since the time of Dufour, various acaridologists have included under *Tetranychus* a number of forms which more recently have been shown to belong in other genera. Consequently, the published statements regarding these misplaced species led to misconceptions of the true structure of the onychial claw in *Tetranychus*. The following references to *Tetranychus* are to presumably valid species of that genus (including the subgenus *Eotetranychus*).

In 1892, Harvey (2) stated that *T. bimaculatus* Harvey has its tarsal claw split into six divisions. Banks (3) in 1900 and again in 1915 (4) stated that in many cases the claw is split into four divisions. Ewing (5) in 1914 figured the tarsal claw as being six-cleft. In 1915, Trägårdh (6) stated that the empodial claw is split into from 4 to 6 spines. In 1917 McGregor (7) showed that in three American species of *Tetranychus* the onychial claw is six-cleft. Again in 1919, the same author (8) stated that he never had found any American species of *Tetranychus* with four-cleft claws. Hirst (9) in 1920 was somewhat vague in his treatment of the claw struc-

*Except where otherwise explained, the following discussion applies to structures of the female mites.